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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,724	10/17/2003	Isao Minematsu	67161-118	8323

7590 03/20/2006

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Washington, DC 20005-3096

EXAMINER
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SONG, JASMINE

ART UNIT	PAPER NUMBER
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2188

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/686,724

Applicant(s)

MINEMATSU ET AL.

Examiner

Jasmine Song

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/17/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **Detailed Action**

1. Applicant's election without traverse of claims 9-13 is cancelled, and claims 1-8 are pending in the application in the reply filed on 12/02/2005 is acknowledged. Thus, this Office action is in response to claims 1-8.

### **Specification**

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### **Drawings**

3. The drawings filed on 10/17/2003 have been approved by the Examiner.

### **Oath/Declaration**

4. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

### **Information Disclosure Statement**

5. The information disclosure statement (IDS) submitted on 10/17/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### **Priority**

6. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### **Claim Rejections - 35 USC § 102**

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Mohamed et al., US 6,684,319 B1.

Regarding claim 1, Mohamed teaches that a semiconductor memory device connected between a processor and an instruction cache, comprising:

an instruction buffer (it is taught as prefetch instruction buffer 114 as shown in Fig.1) storing part of consecutive instructions performed by the processor (it is taught as a particular block of instructions or prefetch instructions are to be placed into prefetch instruction buffer 114, col.3, lines 36-39 and col.4, lines 5-7, the prefetch instructions may be a loop wherein a block of instructions is repeatedly executed a predetermined number of times, col.3, lines 36-44 and lines 48-49, since Mohamed explained the prefetch instruction is a loop or a long instruction word instruction packets and the applicant's specification doesn't explain the particular definition of consecutive instructions, therefore, the prefetch instructions having a loop or a long instruction word instruction packets are considered as consecutive instructions);

an address table setting (col.4, the address mapping table) therein an address range of the part of the consecutive instructions (col.4, lines 49-54);

a determination unit (Mohamed teaches the meaning of determining in col.4, lines 26-30) determining whether an instruction address outputted from said processor fall within the address range set in said address table (it is taught as determining whether the prefetch instructions which having the instruction addresses are already located in prefetch instruction buffer by using the address mapping table, col.4, lines 26-32); and

a selector (Mohamed teaches a multiplexer 122 which has the meaning of selecting, Fig.1 and col.5, lines 29) selectively outputting an instruction code stored in said instruction buffer and an instruction code stored in said instruction cache (it is taught as multiplexer is used to output to instruction register 124 any one of a number of

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different inputs, a first input from prefetch instruction buffer 114 and a second input from instruction cache 110, col.5, lines 29-34) in accordance with a determination result of said determination unit (it is taught as upon receipt of prefetch instruction flag bit, prefetch instruction buffer control unit sets select input flag bit 120 to indicate the instructions are to be obtained from prefetch instruction buffer 114, col.4, lines 26-30, lines 55-60 and col.5, lines 34-38).

Regarding claim 2, Mohamed teaches said determination unit (it is taught as select input 120 and prefetch instruction buffer control unit 116 in the Fig.1) directly connects said processor (Decoder Unit 102 and instruction register 124 in the Fig.1 can be considered as the processor since the processor is a functional unit that interprets and executes instruction data) and said instruction cache (110 in the Fig.1) when an inactive mode is set (it is taught as input flag bit 120 is reset to indicate the multiplexer 122 is to output instructions received from instruction cache and indicate that instructions are to no longer be fetched from prefetch instruction buffer; col.5, lines 63-66 and col.6, lines 19-22).

### **Allowable Subject Matter**

9. Claims 3-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest that the address table and the instruction buffer are mapped on a memory map of the processor and the processor accesses the memory device as a memory mapped device when the operation state of the memory device is in inactive as claimed in claim 3 in combination with the other elements set forth in the claimed invention. The prior art of record also does not teach or suggest that the determination unit includes a first subtracter, a second subtracter and a logic circuit and the detail of function of the first subtracter, the second subtracter and the logic circuit as claimed in the claim 4 and shown in the Fig.2 in combination with the other elements set forth in the claimed invention.

Claims 5-8 are allowable as being dependent upon independent claim 4 and having additional allowable features therein.

### **Conclusion**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nuckolls et al

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12. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111 (c).

13. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine Song whose telephone number is 571-272-4213. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Jasmine Song 

Patent Examiner

March 13, 2006

Mano Padmanabhan

Supervisory Patent Examiner

Technology Center 2100